

INJECTION PUMP TEST SPECIFICATIONS

093000-1471

INJECTION PUMP	093000-147# (ND-PES6A90B312RND147)	MANU-FACTURER	TOYOTA
GOVERNOR	091300-166#	ENGINE TYPE	12H-T
TIMER	091800-220#	VEHICLE MODEL	LAND CRUISER

1. INJECTION TIMING

- | | | | |
|-----------------------|------------------------------------|---------------------------|--------------------|
| 1) Rotation | : Clockwise viewed from drive side | 4) Pre-stroke | : 3.55 – 3.65 mm |
| 2) Injection Order | : 1 – 4 – 2 – 6 – 3 – 5 | 5) Tappet Clearance | : More than 0.2 mm |
| 3) Injection Interval | : 60° ± 30' | 6) Locked Timing Location | : — |

2. ADJUSTMENT OF DELIVERY QUANTITY

Test Conditions

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|----------------------------|--------------------------------|-----------------------|-----------------------------|
| 1) Nozzle | : 093400 – 0540
(DN12SD12A) | 4) Feed Pressure | : 2.0 kgf/cm ² |
| 2) Nozzle Opening Pressure | : 175 kgf/cm ² | 5) High Pressure Pipe | : ø2 x ø6 x 600 mm |
| 3) Test Oil | : SAE J967 (ISO4113) | 6) Fuel Temperature | : 40 – 45 °C (104 – 113 °F) |

Pump Speed (rpm)	Rack Travel (mm)	Number of Strokes	Delivery Quantity (cc/cyl.)	Max. Spread in Delivery (cc)	Remarks
1100	10.7	200	11.3 – 12.3	0.9	
1750	10.7	200	11.3 – 12.5	1.2	
390	8.9	200	0.3 – 1.9	0.6	
100	16.0	500	22.5 – 32.5	4.0	

Overflow valve opening : 1.5 – 1.7 kgf/cm²

3. ADJUSTMENT OF GOVERNOR...Refer to the right side of this sheet.

4. ADJUSTMENT OF PUMP WITH GOVERNOR OPERATION

Lever Position (deg)	Pump Speed (rpm)	Number of Strokes	Delivery Quantity (cc/cyl.)	Remarks
FULL	1100	1000	57.5 – 60.5	Apply positive pressure 200 mmHg to the boost compensator
	1750	1000	56.5 – 62.5	
	500	1000	33.0 – 39.0	
	500	1000	26.0 – 29.0	Apply positive pressure 0 mmHg to the boost compensator

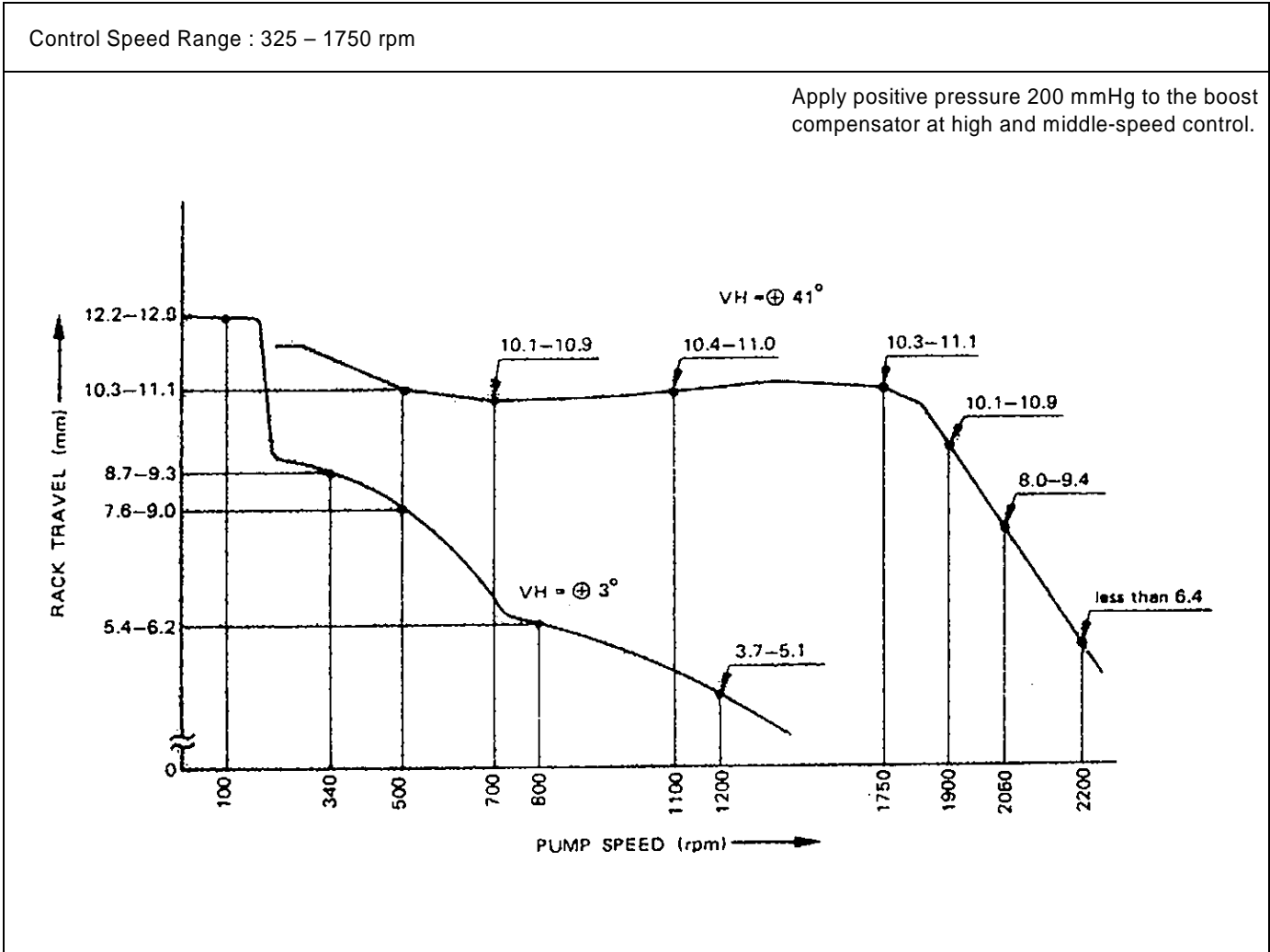
NOTE

Injection timing must be advanced 2° ± 30' at rack travel more than 16.0 mm, compared with that at less than 11.0 mm.
Hysteresis at idle pump speed is less than 0.2 mm (pump speed 390 → 800 → 390 rpm)

5. ADJUSTMENT OF TIMER

N.A. : Not Applicable

Pump Speed (rpm)	1400	1700				
Advance Angle (deg)	0 – 0.5	6.5 – 7.5				



6. ADJUSTMENT OF BOOST COMPENSATOR (Full lever position)

Positive pressure must drop from 1000 mmHg to 980 mmHg in more than 10 seconds.

Pump Speed (rpm)	Boost Pressure (mmHg)	RW (mm)	Delivery Quantity (cc/200st)
500	0	10.0 – 10.2	—
	40	10.0 – 10.2	—
	90	10.5 – 10.9	—

NOTE:

- (1) Stop Lever Operation
Rack travel must be less than 5.0 mm at pump speed 0 rpm.
- (2) Adjusting lever angle between full and idle position must be 33° – 43°.